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Hans-Dieter EVERS

Singapore Management University, hdevers@smu.edu.sg

Solvay GERKE

University of Bonn

Thomas MENKHOFF

Singapore Management University, thomasm@smu.edu.sg

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Little Understood Knowledge Trap

As knowledge increases, we realise how much else we do not know. Successful research always results in new questions. Any knowledge economy must be aware of such unknowns if it is to expand further through research and development. Debate on bridging the digital divide does not take this factor into account. Many of the strategies currently preached are misplaced.

[By Hans-Dieter Evers, Solvay Gerke and Thomas Menkhoff]

Normally, “knowledge” is deemed relevant for meeting the Millennium Development Goals (MDG) in three areas: education, internet access and water management (BMZ 2005). It has been obvious for a long time, however, that knowledge itself has become an essential development factor, if not the most important one of all. In a knowledge-based economy, the creation of wealth from immaterial production (services, computer-assisted production et cetera) exceeds that from material production (manufacturing). Levels of education are relatively high in a knowledge society, knowledge workers make up a large part of the workforce, and a considerable portion of gross domestic product is invested in education, research and development. The World Development Report 1998-99 has drawn attention to these facts (World Bank 1999). According to conventional wisdom, knowledge can be imported quickly and at minimal transaction costs by use of the latest information technology. Governments in countries with few natural resources are thus tempted to try to leap into the post-industrial age. They might even succeed, were it not for the “knowledge trap”. Knowledge is being created on an ever-increasing scale. It is estimated that the volume of knowledge at our disposal (including “junk knowledge”) is currently doubling every five years (Stehr 2001). However, the creation of new knowledge always goes along with the creation of new unknowns. The more one knows, the better one understands what one does not know. Anyone who wants to do relevant research, therefore, needs to know about the unknowns. They are important because they provide the stimuli to search for adequate answers.

The “knowledge trap” lies in the fact that data, information and knowledge are often taken over without any understanding of the corresponding unknowns. This is particularly so when the people acquiring such knowledge simply copy solutions. Failing to import an understanding of the unknowns consequently leads to bad investments and stagnation. Desired results are not achieved, and a “knowledge economy” will certainly not be created.

Since the late 1990s, it has been debated how to bridge the digital divide, both at national and the international levels. It mostly boils down to development strategies that supposedly allow countries to “catch up”: developing countries should emulate the developed knowledge societies, ensure computer literacy, technical infrastructures and facilities, and increase the number of higher education graduates in each age group. Conventional development strategies therefore include:

- interventions in primary and secondary education,
- the promotion of hardware and software infrastructures,
- the digitisation of governments (E-Government) and
- legal reforms (for instance, copyright protection).

In addition, there are also attempts to use modern information technology in various business sectors, for example, in agriculture.

Not a single one of these approaches takes into account the significance of what is unknown. This is problematic. In the initial stages, at least, the strategies mentioned will widen, rather than close, the gulf between established knowledge societies and the societies which are supposed to catch up. Users in poor countries have less and less understanding of how technologies function, and how they might be further developed to serve their interests.

Steps forward

What is needed is a strategy that takes the relevance of unknowns into account. Such a strategy would have to be directed at several things, namely:

- knowledge hubs, competence centres and centres of excellence,
- knowledge clusters as “learning regions”,
- the transfer of knowledge through global production networks, and
- the use of comparative advantages of local knowledge.

Knowledge hubs: Various developing countries have attempted to pursue strategies of localising knowledge. In the early 1980s, Indonesia declared four of its universities to be “centres of excellence”, and gave them particular financial support. The results were not convincing. Only isolated competence centres were established, and they were not adequately networked with other knowledge and production hubs. Knowledge clusters were not created.

Knowledge clusters: Silicon Valley near San Francisco and Silicon Plateau around Bangalore are examples of cluster formation, as is the knowledge region of Munich. There are also the first indications of cluster formation in the Multimedia Super Corridor in Malaysia. Economic research emphasises the close interconnectedness of innovation, local economic growth and cluster formation (Porter 2000).

“Clusters” are regional concentrations of companies, manufacturing subsidiaries, research institutes, universities and other institutions which have a bearing on knowledge. What is important is the diversity of the players involved. They may complement one another, be in competition, or cooperate. Our research in Singapore has also demonstrated the relevance of these structures (Menkhoff and Gerke 2002; Menkhoff, Evers et al. 2005).

Global production networks: Today, the production and transfer of knowledge take place against the background of globalisation. Global production networks are expanding rapidly, and, under certain conditions, ensure the cross-border transfers of knowledge. Typically, knowledge clusters with a high

level of diversity are particularly closely involved in such networks. However, the trend towards GPNs is sometimes double-edged. While larger suppliers are furnished with knowledge, even if only to satisfy the quality standards of potential customers, small and medium-sized enterprises at the end of the knowledge chain often become marginalised. They also often lack the skill and the expertise to absorb global knowledge. Given the speed with which knowledge is produced in the already operational knowledge economies, it is hardly possible to catch up simply by closing "knowledge gaps". Moreover, transnational corporations mainly impart "packaged knowledge", a type of "fast food" for rapid consumption, which is disassociated from any understanding of the unknowns relevant for enhancing local capacities.

Local knowledge: The transfer of global knowledge into the local context always requires the use of local knowledge. This provides special opportunities for developing countries which open up to the world market in the course of globalisation, either through choice or because they are forced to do so. Globalisation of local knowledge and localisation of global knowledge are the prerequisites for the use of knowledge as an engine for growth. German development policy-makers should consider giving greater thought to the development of knowledge clusters. For that to happen, they would have to give up their predominantly economy-oriented approach and adopt a more comprehensive one. After all, a complex environment with government institutions, scientific institutions and civil society organisations is necessary to structure local knowledge development successfully. Above all, however, development policy would have to begin dealing once again with higher education, research and related issues.

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About the authors

Prof. Dr. Hans-Dieter Evers is a senior fellow at the Centre for Development Research (ZEF) at the University of Bonn. hdevers@uni-bonn.de

Prof. Dr. Solvay Gerke is director at the Centre for Development Research (ZEF) at the University of Bonn. solvay.gerke@uni-bonn.de

Prof. Dr. Thomas Menkhoff teaches at the Lee Kong Chian School of Business, Singapore Management University. thomasm@smu.edu.sg